

Notice of Allowability

Application No.

10/779,885

Examiner

Victor J. Taylor

Applicant(s)

THOMANN ET AL.

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/08/2007.
2. ☒ The allowed claim(s) is/are 1-24.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 4/05/2007
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Claims

1. Claims 1-24 are pending in the instant application. Therefore, claims 1-24 are presented for examination.

Drawings

2. The drawings were received on 21 April 2005. These drawings are approved.

Priority

3. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged.

Information Disclosure Statement

4. The information disclosure statement (IDS) was submitted on 5 April 2007. This submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statement.

Response to Arguments

5. Applicant's arguments see the response of record filed 8 February 2007 with respect to the response of 8 February 2007 have been fully considered and are persuasive. The 101 issues for claims 1-24 and rejection of 8 August 2006 are moot and have been withdrawn.
6. Applicant's arguments see the response of record filed 8 February 2007 with respect to the response of 8 February 2007 have been fully considered and are

persuasive. The 102 (b) issues and rejection of 8 August 2006 are moot and have been withdrawn.

Allowable Subject Matter

7. Claims 1-24 are allowed.

8. The following is an examiner's statement of reasons for allowance:

I. Wherein Independent claim 1 a method for using a BHA deployed in a borehole to estimate a formation property with steps of "generating a source signal from the bottom hole assembly"...[and] with steps for "detecting at least one receiver signal using the bottom hole assembly" wherein the steps for "computing a frequency dependent characteristic of the said at least one receiver signal...[and] "using the said frequency dependent characteristic to estimate a property of a formation in the region of the said bottom hole assembly (BHA)" as argued by the applicant in the response of record of the amendment convince the examiner that the limitations cited in the instant application are allowable over the cited art of record.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

Claims 2-19 and 23-24 are variously dependent on the allowed independent claim 1 and are allowed at least for the reasons cited above.

II. Independent claim 20 a method to continuously estimate the pore pressure of formations ahead of a bore hole assembly with steps of "generating a source signal from the bottom hole assembly" wherein the source signal is a noise spectrum generated by a drill bit...[and] with steps for "detecting at least one receiver signal using

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the bottom hole assembly"... wherein the explicit steps for "using the source signal and the receiver signal to estimate a pore pressure of at least one said formation "...[and] repeating the steps for a-c as the BHA moves sequentially downhole through the formations" to estimate the pore pressure as amended and argued in the response is not found in the cited art of record.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

III. Independent claim 21 a method for continuously monitoring the wellbore pressure safety margin corresponding to formations ahead of the BHA with steps of "generating a source signal from the bottom hole assembly" wherein the source signal is a noise spectrum generated by a drill bit...[and] "detecting at least one receiver signal using the bottom hole assembly"...[and] with steps "using the source signal and the receiver signal to determine a pore pressure of the formation...[and/or] in combination with the specific combination of steps for "using the pore pressure to monitor the wellbore pressure safety margin" while "repeating steps a-d in sequence as the BHA tool moves sequentially downward in the borehole through the formations" as amended and argued in the response on is not found in the cited art of record.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

IV. Independent claim 22 a method for continuously optimizing the weight of drilling mud used in the drilling operation wherein the BHA tool is deployed in a borehole to "generate a source signal from the bottom hole assembly" wherein the source signal

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is a noise spectrum generated by a drill bit during the drilling operation method steps for "detecting at least one receiver signal using the bottom hole assembly"...[and] "using the source signal and the receiver signal to determine a pore pressure of the formation ahead of the bottom hole assembly (BHA)"...wherein the "pore pressure is used to specify a weight of the drilling mud which corresponds to a target wellbore pressure safety margin as amended and argued in the response on is not found in the cited art of record.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

It is these reasons and the limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor J. Taylor whose telephone number is 517-272-2281. The examiner can normally be reached on 8:00 to 5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 571-272-2863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VJT

June 1, 2007



BRYAN BUI
PRIMARY EXAMINE

